

WHAT IS CLAIMED IS:

1. Aminooxy-cyclodextrin derivatives of the formula 1:



wherein

CD is a mono- or polydeoxy α -, β - or γ -cyclodextrin, carrying in its 6-, 3- and/or 2-position the aminooxy function containing group (X-Y-ONH₂), and optionally carrying further substituents different from (X-Y-ONH₂) in their 6-, 3- and/or 2-positions, and wherein Y is a linker group between the aminooxy group and the mono- or polydeoxy-CD-group,

15 X is a functional group or an atom necessary to connect the linker Y and the deoxy CD group, or Y is a direct bond when X is a direct bond,

and n is ≥ 1 , but ≤ 24 , 21 and 18 for α -, β - or γ -cyclodextrin, respectively, as well as the aminooxy protected derivatives thereof, especially ethoxy-ethylidene protected aminooxy and acetone oxime derivatives thereof.

2. A derivative according to claim 1, wherein Y and X are both direct bonds.

25 3. A derivative according to claim 1 or 2, wherein one or more of the primary hydroxy groups at a 6-position of α -, β - or γ -CD are substituted with a X-Y-ONH₂ fragment, wherein X and Y have the meaning of claim 1.

30 4. A derivative according to ~~any one of claims 1 and 3~~, wherein Y is a linear or branched alkylene, alkenylene with one or more double bounds which may be either isolated or conjugated, alkynylene with one or more triple bonds which may be either isolated or conjugated, or arylene or arylalkylene fragments where aryl may be substituted or not substituted, whereby the alkylene, alkenylene and alkynylene-

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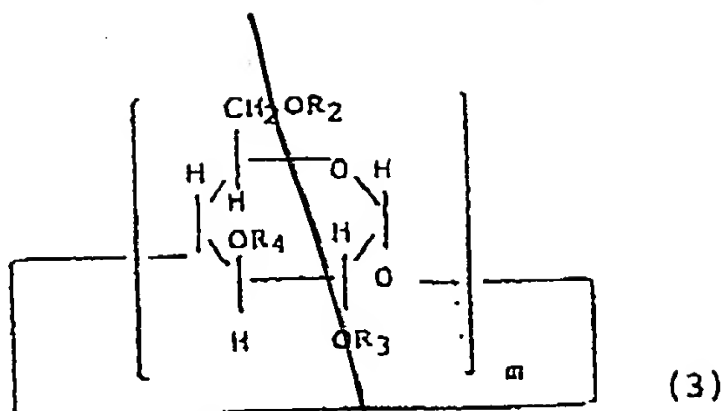
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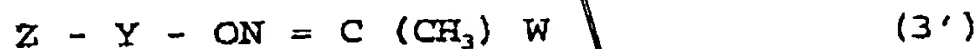
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including R_2 , R_3 , and R_4 are hydroxyl groups or substituents defined in claim 7, exemplified by unsubstituted alkoxy, like $C_1 - C_6$ - alkoxy or aryloxy like phenyl-, benzyl-, tolyl-, or acyloxy, in which substituents' functional groups, if they exist, are protected whenever necessary, whereby at least one of the positions 6, 3, and/or 2 contain hydroxyl group, preferably 6- hydroxy group, is alkylated with a compound according to formula (3'):

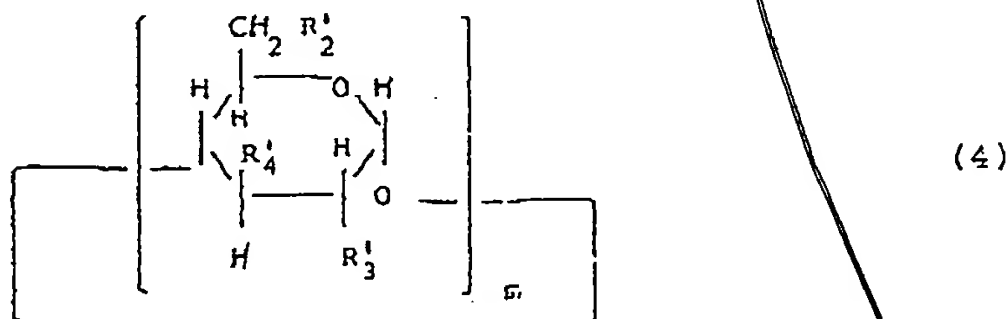


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wherein W means group $-OC_2H_5$ or $-CH_3$, m and Y are as defined in claims 1 or 3, and Z is a reactive group, preferably Cl , Br , I , tosyl, mesyl or epoxy group, and optionally protecting group(s) is/are removed, or

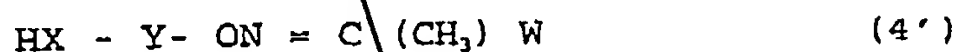
b) a cyclodextrin derivative of formula (4) is alkylated

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wherein R'_2 , R'_3 , R'_4 are hydroxy or activated groups like tosyl, mesyl, halogen, ester, epoxy, preferably tosyl or halogen, possibly bound through a linker group, like alkylen, or substituent as defined in claim 7, said substituent being in a protected form if necessary, whereby the CD-derivative contains at least one of said activated groups with the compound of formula (4')



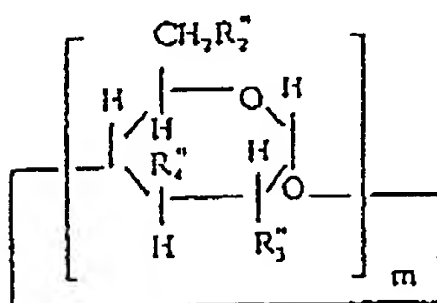
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wherein X and Y are as in claim 1, or as in 3 and 4, and X is preferably S or HN- fragment and Y has the meaning defined in claim 6, and W is defined as above, and protecting group(s) is/are possibly removed if necessary, or

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c) a cyclodextrin derivative of compound with formula (5)

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(5)

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wherein at least one of the groups R''_2 , R''_3 , and R''_4 mean thiol-, amino-, karboxy- etc. group possibly linked directly to deoxy-CD-ring, or mean alkyleneoxy- or acyloxy groups which contain at least one thiol-, amino-, karboxy-, etc. group, or their derivative, and the remaining functional groups are hydroxyl groups or they have the meaning described in claim 7 for the substituents, and exist, if necessary, in a protected form, typical example being unsubstituted alkoxy, aryloxy, or acyloxy, modified with an appropriate aminooxy protected substituted hydroxylamine according to formula (3'), after which the protecting

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group(s) are removed, or
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d) CD-derivative of formula (5), which contains one or more of keto or aldehyde groups, possibly bound through a linker group, is allowed to react with bisaminooxy alkanes of formula (5')

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wherein t is 2-12, and wherein one of the methylene groups
15 can be substituted with oxygen or sulfur atom, or wherein -NH- or -S-S- groups, and a protecting group is removed if necessary.

20 9. The use of any of the CD-derivatives of claim 1 for preparation of oximes with ketones or aldehydes, for preparation of aminooxy derivatives of nucleotide- and nucleoside pyrimidines or purines, or for preparation of inclusion complexes with guest molecules by said CD-
25 derivatives.

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10. Oximes of any one of the aminooxy-CDs of claim 1 with a synthetic or natural aldehydes or ketones.

30 11. Derivatives of nucleotide or nucleoside pyrimidines or purines with aminooxy-CDs, wherein aminooxy group is linked to heterocyclic ring, preferably through pyrimidine C-4 and purine C-6, and wherein pyrimidine and purine are preferably cytosine or adenine as such or as their derivatives.

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